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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,491	01/11/2001	Haruo Tanaka	P107400-00021	8241

7590 05/18/2004

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 05/18/2004

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/757,491

Applicant(s)

TANAKA ET AL.

Examiner

Jennifer T Nguyen

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 5, 6 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2674

DETAILED ACTION

1. This Office action is responsive to amendment filed on 03/05/2004.
2. The indicated allowability of claim 3 is withdrawn in view of the newly discovered reference(s) to Stewart (U.S. Patent No. 5,952,789) and Dawson et al. (U.S. Patent No. 6,229,506). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 2, 3, 8, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Stewart (U.S. Patent No. 5,952,789).

Regarding claims 2 and 9, referring to Fig. 1, Stewart teaches a display device comprising: a display element (210); a control element (T2) for controlling a current to be applied to the display element (210) to drive the display element (210); and a nonvolatile data holding section (C1) connected to said control element (T2) and capable of holding control data of said control element (T2) in a floating state wherein the control element (T2) is formed of MOS transistor type element, one of a drain and a source of the MOS transistor type element (T2) is connected to the display element (210) and the other is connected to a driving line (D2), a gate side of the MOS transistor type element (T2) is connected to a control line (S2) through the nonvolatile data holding section (C1), and plural sets of the display element (210), the control

Art Unit: 2674

element (T2) and the nonvolatile data holding section (C1) are formed as each pixel (290) in a matrix (from col. 4, line 46 to col. 5, line 31).

Regarding claim 3, Stewart further teaches a selective transistor (T1) is connected between said nonvolatile data holding section (C1) and said control line (S2), and a gate of said selective transistor is connected to a selective line (S1) (from col. 4, line 46 to col. 5, line 31).

Regarding claim 8, Stewart further teaches the nonvolatile data holding section is constituted by a single electron memory (from col. 4, line 46 to col. 5, line 31).

5. Claims 2, 3, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Dawson et al. (U.S. Patent No. 6,229,506).

Regarding claims 2 and 9, referring to Figs. 2 and 6, Dawson teaches a display device comprising: a display element (290); a control element (P2) for controlling a current to be applied to the display element (290) to drive the display element (290); and a nonvolatile data holding section (Cs) connected to said control element (P2) and capable of holding control data of said control element (P2) in a floating state wherein the control element (P2) is formed of MOS transistor type element, one of a drain and a source of the MOS transistor type element (P2) is connected to the display element (290) and the other is connected to a driving line (220), a gate side of the MOS transistor type element (P2) is connected to a control line (210) through the nonvolatile data holding section (Cs), and plural sets of the display element (290), the control element (P2) and the nonvolatile data holding section (Cs) are formed as each pixel (200) in a matrix (col. 2, lines 13-25 and from col. 2, line 55 to col. 4, line 34).

Regarding claim 3, Dawson further teaches a selective transistor (P2) is connected between said nonvolatile data holding section (Cs) and said control line (210), and a gate of said selective transistor is connected to a selective line (210) (from col. 2, line 55 to col. 4, line 34).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart (U.S. Patent No. 5,952,789) in view of Adachi et al. (U.S. Patent No. 5,631,664).

Regarding claim 4, Stewart differs from claim 4 in that he does not specifically teach the nonvolatile data holding section is formed of a ferroelectric capacitor. However, Adachi teaches nonvolatile data holding section is formed of a ferroelectric capacitor (22a) (col. 10, lines 48-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the nonvolatile data holding section is formed of a ferroelectric capacitor as taught by Adachi in the system of Stewart in order to increase the speed and writing lifetime of the display device.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart (U.S. Patent No. 5,302,966) in view of Taguchi et al. (Pub. No. U.S 2002/0153881).

Regarding claim 7, Stewart differs from claim 7 in that he does not specifically teach the nonvolatile data holding section is constituted by an element utilizing a magnetoresistance effect.

Art Unit: 2674

However, Taguchi teaches nonvolatile data holding section (i.e. capacitor) is constituted by an element utilizing a magnetoresistance effect ([0046], [0269] and page 14, lines 1-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the nonvolatile data holding section is constituted by an element utilizing a magnetoresistance effect as taught by Taguchi in the system of Stewart in order to reduce the size of the substrate of display without performing the flattening treatment.

9. Claims 5, 6, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Applicant's arguments with respect to claims 2-9 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**. The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

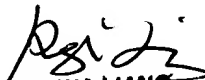
Or faxed to: 703-872-9306 (for Technology Center 2600 only)

Art Unit: 2674

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

JNguyen
05/11/2004


REGINA LIANG
PRIMARY EXAMINER